

**Material Safety Data Sheet**  
May be used to comply with  
OSHA's Hazard Communication Standard,  
29 CFR 1910.1200. Standard must be  
consulted for specific requirements.

Tom Mator

**U.S. Department of Labor**  
Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

**VART-00-0001.01**



**IDENTITY (As Used on Label and List)**  
Lead-Acid Storage Battery

*Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.*

**Section I**

**Manufacturer's Name**  
Varta Industrial Batteries, Ltd.

**Address (Number, Street, City, State, and ZIP Code)**  
5265 Tractor Road - Unit D

Toledo, Ohio 43612

**Emergency Telephone Number**

(419) 476- 6182 -- Fax # (419) 478-0496

**Telephone Number for Information**

As Above

**Date Prepared**

March --1991

**Section II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	% (optional)
Sulfuric Acid based Electrolyte (Acid mist may be generated during Charging)	1.0 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup>	15-25%
Lead (Pb) and Lead Compounds	.05mg/m <sup>3</sup>	.15mg/m <sup>3</sup>	70-90%
Antimony (Sb)	.5 mg/m <sup>3</sup>	.5 mg/m <sup>3</sup>	0- 5%
Arsenic (As)	.01mg/m <sup>3</sup>	.2 mg/m <sup>3</sup>	<1%

\* Exclusive of case

**Section III — Physical/Chemical Characteristics**

<b>Boiling Point</b> For Electrolyte	212-260°F	<b>Specific Gravity (H<sub>2</sub>O = 1) or H<sub>2</sub>SO<sub>4</sub></b>	1.320
<b>Vapor Pressure (mm Hg.)</b> For Electrolyte	<1 mm	<b>Melting Point</b> Or Metal Alloys	~ 600°F
<b>Vapor Density (AIR = 1)</b>	N/A	<b>Evaporation Rate</b> (Butyl Acetate = 1)	Similar to Water

**Solubility in Water**  
Electrolyte is a water solution - Remainder of ingredients essentially non-soluble

**Appearance and Odor**

No Detectable Odor

pH of Electrolyte <1

**Section IV — Fire and Explosion Hazard Data**

<b>Flash Point (Method Used)</b>	N/A	<b>Flammable Limits</b>	N/A	<b>LEL</b>	N/A	<b>UEL</b>	N/A
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**Extinguishing Media**

Halon or Dry Chemical

**Special Fire Fighting Procedures**

Full-body protective clothing and self-contained breathing apparatus

**Unusual Fire and Explosion Hazards**

Internal metals and acid can emit toxic fumes when exposed to high heat from fire. Vapors, fumes, and dusts caused by overheating of battery due to fire can cause irritating and/or toxic materials to be released. Sulfuric acid based Electrolytes can cause ignition of combustible materials on contact. Easily ignitable Hydrogen gas

## Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

### Incompatibility (Materials to Avoid)

Numerous compounds including most organics, reducing agents, some metals, caustics and others

### Hazardous Decomposition or Byproducts

Carbon Dioxide, Carbon Monoxide, Hydrogen, Sulfur Dioxide (SO<sub>2</sub>), Sulfur Trioxide (SO<sub>3</sub>), Arsine, Stibine, Metal

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

## Section VI — Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Skin? Yes	Eyes? Yes	Ingestion? Yes
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### Health Hazards (Acute and Chronic)

Eyes: Severe burns, corneal damage/blindness from exposure to acid (electrolyte)

Skin: Severe irritations, acid burns, ulceration possible

Inhalation: Respiratory irritation and/or other tissue damage possibly leading to more serious pulmonary illness

Carcinogenicity:	NTP? Yes	IARC Monographs? Yes	OSHA Regulated? Yes
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Only possible during severe or catastrophic damage to battery through fire, explosion or other causes or intentional misuse. See addendum for further details.

### Signs and Symptoms of Exposure

Slight to severe respiratory, skin or eye irritation or burns. If ingested, burns to mouth, nose, throat, and

intestinal tract. See addendum for further details.

### Medical Conditions

Generally Aggravated by Exposure Respiratory conditions from exposure to acids or acid mist.

### Emergency and First Aid Procedures

For acid (electrolyte) - Immediate and thorough flushing of eyes, skin, or other affected parts for 10-20 minutes

Seek medical attention if exposure is substantial. If ingested give milk, do not induce vomiting, seek medical attention.

## Section VII — Precautions for Safe Handling and Use

### Steps to Be Taken in Case Material is Released or Spilled

Contain and neutralize spill and dispose of in accordance with applicable hazardous waste regulations.

If spill reaches sewer or natural waters, notify EPA or other applicable regulatory agency and react accordingly

### Waste Disposal Method

Dispose of acids, metals and other components through licensed waste hauler and disposal site.

### Precautions to Be Taken in Handling and Storing

Wear proper personal protective equipment and wash hands, face, neck and arms before eating or smoking.

Provide eyewash in area where batteries are handled or filled.

### Other Precautions

Avoid physical damage to batteries and prevent smoking or open sparks in area. Avoid overcharging batteries.

## Section VIII — Control Measures

Respiratory Protection (Specify Type) None normally necessary - if excessive acid mist is generated utilize approved full face acid mist respirator. In case of fire or emergency, notify fire department - self-contained breathing apparatus recommended

Ventilation	Local Exhaust Preferred - To prevent buildup of hydrogen gas during charging	Special N/A
	Mechanical (General) Sometimes acceptable	Other N/A

### Protective Gloves

Yes - When handling acids/battery liquid

Eye Protection Always wear face shields and chemical goggles when handling batteries or acid.

### Other Protective Clothing or Equipment

Aprons, boots, gloves, etc. in addition to above when handling acid.

### Work/Hygienic Practices

No smoking when batteries are being charged - Hydrogen gas can be produced.

# UARIA INDUSTRIES, INC.

## ADDENDUM

To

### MSDS Sheet for Lead-acid Storage Batteries

The hazards involved with normal day to day use of lead-acid storage batteries are those associated with handling of the battery, addition of the electrolyte (acid), and charging of the battery. These hazards which include chemical (acid) burns, irritation, hydrogen gas buildup, etc., are described in the body of the MSDS.

In the case of severe or catastrophic damage to the battery due to impact, case failure, fire, explosion, other emergencies or intentional dismantling or damage, health effects from the battery components listed below could be of concern in addition to those listed on the MSDS.

The health or safety effects that may be associated with the above unusual situations are as follows:

Lead - Chronic or intense acute exposure through inhalation or ingestion could cause typical effects of lead intoxication which include damage to kidneys, blood and blood forming organs, nervous system, reproductive system, and other organs. Symptoms of overexposure may include high blood lead level, nervous system disorders, nausea, headaches, and G.I. system disturbances.

Arsenic - A toxic human poison and carcinogen. Exposure should be minimized to extent possible. Can cause irritation or damage to peripheral nervous system, liver, respiratory system, and skin. Symptoms of overexposure may include nausea, vomiting, respiratory irritation, dermatitis, skin irritation and other associated problems, nervous system disorders, cancer, and death.

Antimony - Antimony compounds are skin, eye, G.I. tract, and respiratory irritants as well as nervous system, liver, and other organ toxins. Symptoms of overexposure may include inflammation to the respiratory system and G.I. tract, nausea, headache, vomiting, fatigue, dizziness, muscle pain, etc.

In summary, normal or casual contact with these batteries during industrial use would not be expected to produce the adverse effects described in this addendum. In the case of severe, catastrophic or intentional damage to the battery, emergency workers would probably be at most risk of exposure.